

For: SOLUTION FOR SEALING POROUS  
METAL SUBSTRATES AND PROCESS  
OF APPLYING THE SOLUTION

**In the Claims:**

Please amend the claims as follows:

1. (currently amended) An aqueous solution for reducing and sealing the porosity of sintered, compacted powdered metal and liquid cast metal products from the group of metals, such as iron, steel, aluminum, titanium, magnesium, copper, brass, bronze, zinc, nickel, and their alloys without altering the metallurgical properties of the products, so that the subsequent application and performance of functional surface treatments or performance coatings is effective, comprising a blend of:

5 to 50 parts ~~2:00~~ 2.00 weight ratio aqueous sodium silicate solution,

5 to 50 parts ~~3:22~~ 3.22 weight ratio aqueous sodium silicate solution, and

20 to 90 parts ~~2:50~~ 2.50 weight ratio potassium silicate solution,

and diluted by filtered and deionized water in the range of 10 and 200% of the neat silicate blend.

2. (original) The aqueous solution of Claim 1, wherein the silicate solutions are blended by low shear mixing.

3. (original) The aqueous solution of Claim 1, wherein the neat silicate blend is modified by wetting agents, rheological agents, dyes, plasticizers, functional pigments, or lubricants.

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4. (original) The aqueous solution of Claim 1, wherein the blend further includes 0.0005 to 0.05 parts by weight wetting agent of the neat silicate solution weight.

5. (currently amended) An aqueous solution for reducing and sealing the porosity of sintered, compacted powdered metal and liquid cast metal products from the group of metals such as iron, steel, aluminum, titanium, magnesium, copper, brass, bronze, zinc, nickel, and their alloys without altering the metallurgical properties of the products, so that the subsequent application and performance of functional surface treatments or performance coatings is effective, comprising:

36 parts ~~2:00~~ 2.00 weight ratio aqueous sodium silicate solution,

24 parts ~~3:22~~ 3.22 weight ratio aqueous sodium silicate solution, and

40 parts ~~3:22~~ 2.50 weight ratio aqueous ~~sodium~~ potassium silicate solution.

6. (original) The aqueous solution of Claim 5, which is further diluted with filtered and deionized water, and modified by wetting agents, rheological agents, dyes, plasticizers, functional pigments, or lubricants.

7. (original) The aqueous solution of Claim 5, wherein the silicate solutions are blended by low shear mixing.

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8. (currently amended) A blended aqueous solution for reducing and sealing the porosity of sintered, compacted powdered metal and liquid cast metal products from the group of metals, such as iron, steel, aluminum, titanium, magnesium, copper, brass, bronze, zinc, nickel, and their alloys without altering the metallurgical properties of the products, so that the subsequent application and performance of functional surface treatments or performance coatings is effective, comprising a blend of:

5 to 50 parts ~~2:00~~ 2.00 weight ratio aqueous sodium silicate solution,

5 to 50 parts ~~3:22~~ 3.22 weight ratio aqueous sodium silicate solution, and

20 to 90 parts ~~2:50~~ 2.50 weight ratio potassium silicate solution, and

filtered water in the range of 10 and 250% of the neat solution weight of the blend.

9. (currently amended) The blended aqueous solution as defined by Claim 8,  
which further comprises:

a lithium silicate sol having a weight ratio of silicate to alkali expressed as  $\text{SiO}_2:\text{Li}_2$  of typically ~~10:0~~ 10.0.

10. (canceled)

11. (canceled)

12. (canceled)

13. (canceled)

14. (canceled)

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15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)